

USPN. 10/701,253  
 Examiner: RAMESH KRISHNAMURTHY  
 Group A.U. 3753

# REMARKS

The Examiner's comments and grounds of rejection raised in the Office Action dated October 1, 2004 have been carefully considered by the Applicant. Particularly, to further the prosecution of the present application the following remarks are submitted.

The Examiner rejected claims 1 to 4, 8 and 9 under 35 U.S.C. § 102(b) as being anticipated by Shindel, U.S. Patent No. 2,882,992.

The Examiner rejected claims 5 to 7 and 10 under 35 U.S.C. § 103(a) as being anticipated by Shindel in view of EP 0 717 821 B1.

The Examiner allowed claims 11 to 21.

With regard to the invention as claimed in independent claim 1, Applicant maintains that none of the cited prior art documents discloses a spring-loaded pressure relief valve, particularly for containers of pressurized fluids, comprising a valve body that is associable with a container and which forms a discharge port that is controlled by a main piston, an auxiliary valve being further provided which controls a venting port and drives the intervention of said main piston, wherein said main piston is accommodated in a cavity that is formed in said valve body and is open in an axial direction on the opposite side with respect to said venting port.

Shindel, differently from the invention claimed in claim 1, discloses a pressure fluid system relief valve comprising, among other elements, a valve chamber having an inlet port through one end thereof and an outlet relief port in the side wall thereof.

Therefore, with regard to the location of the inlet and outlet ports, Shindel discloses the following:

- (i) the outlet port is in the side part of the wall of the chamber (see claim 2 and see the relief port 15 in both figures)
- (ii) the inlet port is at one end of the chamber (see claims 1 and 2 and the inlet passage 6 of Figure 1).

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Instead, claim 1 of the instant application unambiguously recites that the opening of the valve body (12 of Fig.1) is located, contrary to Shindel, in an axial direction on the opposite side with respect of the venting port, which is positioned axially to the main piston and thus axially to the inlet passage (42 of Fig.1). Moreover, also in the patent application specification, on page 4, lines 15-18, it is explained that *"the piston 10 is accommodated in a preferably cylindrical cavity 11, which is formed in the valve body 2 and has, on the opposite side with respect to the discharge port 5, an open end, designated by the reference numeral 12, that forms in practice an outlet in an axial direction"*.

Therefore, it is respectfully believed that the invention as claimed is unambiguously new over the cited prior art.

Applicant respectfully maintains that claim 1 distinguishes the invention over the prior art and particularly over the disclosures of Shindel in a non-obvious way, as it will become apparent from the following remarks, since the novel spring-loaded pressure relief valve as claimed in claim 1 leads to results which are advantageous over the prior art.

A first advantage of the structural feature of having an axial outlet port is that *"the discharged fluid, thanks to the particular shape of the valve, is made to exit in an axial direction and therefore does not interfere with other elements located proximate to the valve"* (see patent application specification page 6, lines 27-29).

In fact, in valves where the pressurized fluid is discharged in a radial direction with respect to the valve body, considerable problems are caused in applications on tanks that contain flammable gases or liquids (see patent application specification on pag. 2, lines 13-16).

Inventor notes that *"the aim of the invention is to overcome the drawbacks noted above, by providing a spring-loaded pressure relief valve, particularly for containers of pressurized fluids, that allows to optimize the outflow of pressurized fluids, with the possibility to convey them correctly outward without causing problems for the surrounding environment"* (see patent application specification on pag. 2, lines 24-28).

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Another advantage of such structural features is the fact that *"the particular structure of the valve, in addition to allowing discharge in an axial direction, allows to replace the auxiliary valve without having to act on the remaining components of the valve, since it is possible to remove the valve without acting on the settings of the spring that pushes the auxiliary gasket"* (see patent application specification from page 7, line 30 to page 8, line 4).

In fact, in the patent application specification it is explained that in some prior art systems *"another problem is constituted by the fact that when it is necessary to replace the auxiliary valve, the intervention performed inevitably removes the setting of said valve and therefore in most cases it is necessary to disassemble the valve completely and to replace and consequently set the auxiliary valve directly at the factory, with the obvious associated problems"* (see patent application specification on pag. 2, lines 17-22).

In fact, one of the objects of the present invention *"is to provide a relief valve in which it is possible to act on the auxiliary valve, replacing it in situ, without having to empty the container and without replacing the entire valve or in any case without complex maintenance interventions that are difficult to perform in situ"* (see patent application specification from pag. 2, line 29 to page 3, line 3).

It is respectfully pointed out that the above problem is one of the problems affecting the pressure fluid system relief valve disclosed in Shindel, which fails to provide a solution for in-situ replacement.

Therefore, it seems clear that Shindel does not teach or fairly suggest all the features recited in claim 1, so that it is respectfully believed that the invention of claim 1 involves an inventive step over the prior art.

In view of the foregoing remarks independent claim 1 as well as claims 2 to 10 dependent therefrom, are deemed to be in condition for patent allowance. Claims 11 to 21 were already allowed by the Examiner.

Applicant respectfully believes that the present application is now in order for allowance, and a notice to this effect is respectfully expected.

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Respectfully submitted,



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